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MAR 05 2007

Application No.: 10/534,968

Docket No.: 4590-399

AMENDMENTS TO THE DRAWINGS:

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Submitted herewith are two (2) sheets of New Drawings in connection with the above referenced application.

Entry is respectfully requested.

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REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-20 remain pending in the application. Claims 1, 4, 8, 10 and 11 have been amended.

The drawings are objected to as indicated in the Notice of Draftsperson's Patent Drawing Review. In response two (2) New Sheets are submitted herewith.

Applicant appreciatively notes that claims 2, 9, 12, 15 and 19 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten into independent form including all of the limitations of the base claim and intervening claims.

Applicant also appreciatively notes that claim 10 would be allowable if amended to overcome the rejections under 35 USC 112, set forth in the Office Action, and if rewritten into independent form including all of the limitations of the base claim and intervening claims.

Claim 1 is objected to because of the noted informality. In response, Applicant has amended claim 1 as suggested by the Examiner. Therefore, this objection should be withdrawn.

Claims 4, 10, and 11, are rejected under 35 USC 112, second paragraph because of the term "preferably" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. In response, the term preferably has been deleted from these claims and therefore the rejection should be withdrawn.

Claims 1, 3-8, 11, 13, 14, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gounon. In response, independent claims 1 and 8 have been amended and the claims are believed to be patentable for the reasons discussed below.

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Claim 1 has been amended to clarify that in step c) the calculation of the new linear combinations of pseudo ranges and the calculation of the precise relative position P_p are reiterated. It is also now clear that for each stage of the iterative procedure, a new estimated position P_e is set as being equal to the precise relative position P_p calculated during the previous iteration, and that the new estimated position P_e is then used in the next calculation of the precise relative position P_p .

We provide the following comments concerning the novelty and inventiveness of the proposed amended claims.

Gounon describes a method for determining the relative position of a mobile in relation to the known position of a reference station, each using an antenna for receiving radio signals originating from an arrangement of positioning satellites transmitting on at least two frequencies L1 and L2.

According to Gounon, two linear combination equations are chosen, namely $L_4 = 4L_2 - 3L_1$ and $L_5 = 4L_1 - 5L_2$ (page 4, paragraph 3). Positions are then calculated independently using each of the linear combinations L_4 and L_5 , the positions being represented by the co-ordinates XL_4 , YL_4 , ZL_4 and XL_5 , YL_5 , ZL_5 respectively. Finally the positions calculated (XL_4 , YL_4 , ZL_4 and XL_5 , YL_5 , ZL_5) are combined using the equations given at page 4, last two lines and page 5, first line to give a precise position.

Thus, Gounon discloses some of the features of claim 1 (the use of a predetermined list having at least two linear combination equations of frequencies, L_4 and L_5 , and the calculation of positions on the basis of the linear combination equations).

However, the procedure disclosed in Gounon is clearly not an iterative procedure, as required by claim 1, in which at each iteration a new linear combinations of pseudo ranges is calculated and a precise relative position P_p is calculated and a new estimated position P_e is set as being equal to the precise relative position P_p .

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Instead, Gounon merely discloses the combination of two positions (XL4, YL4, ZL4 and XL5, YL5, ZL5) each calculated independently using one of two linear combination equations. There is no suggestion in Gounon of the use of an estimated position, the calculation of a more precise position using a linear combination equation selected from a list, and the setting of that more precise position as the estimated position, for use in the next iteration.

The Examiner has commented that, with regard to step c) of claim 1, "... the list only has two entries, the calculation of L4 and L5 in the first, and the calculation based on L4 and L5 in the second". Thus, it appears that the Examiner argues that the equations at page 4, last two lines and page 5, first line are members of the predetermined list of linear combination equations of frequencies. It is respectfully submitted that the equations at page 4, last two lines and page 5 are not linear combination equations of frequencies, but instead are equations which merely combine positions calculated using one linear combination equation of frequencies (L4) with positions calculated using the other linear combination equation of frequencies (L5).

The equations representing L4 and L5 are linear combination equations of frequencies. However these equations are not used in an iterative procedure as recited in claim 1.

In light of the above, it is respectfully submitted that Claim 1 is clearly novel in view of the cited prior art.

The claimed invention provides an iterative procedure in which a precise relative position is calculated based on an estimated position and on linear combinations of pseudo-ranges corresponding to a linear combination equation selected from a list (step b), and in which that precise relative position becomes the new estimated position for the next iteration of the procedure which calculates an even more precise relative position based on that new estimated position and based on the following linear combination equation (step c) and in which the procedure is then further iterated for all of the linear combination equations in the list (step d).

The invention addresses in particular the problem of determining accurately, rapidly and without ambiguity a precise relative position, in the presence of ionospheric errors (see page 6 of

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the application as filed). By appropriate choice of linear combination equations in the list at each successive iteration the sensitivity of the calculated position to ionospheric errors is reduced and the position is calculated more accurately. At each iteration the precise position is calculated based on the estimated position obtained during the previous iteration, and so the calculated position converges to the final, accurate calculated position without introduction of ambiguity in the calculated position.

By contrast, Gounon takes an entirely different approach in which two positions (XL4, YL4, ZL4 and XL5, YL5, ZL5) are calculated independently using one of two linear combination equations, and in which those independently calculated positions are combined using the equations at page 4, last two lines and page 5, first line in order to provide a noise cancellation effect.

There is no suggestion in Gounon of an iterative procedure in which ever more precise relative positions are calculated based on each successive linear combination equation in the list and on the position calculated in the previous iteration, there is nothing in the prior art to suggest such an iterative procedure, and the skilled person would not have contemplated modifying the teaching of Gounon to provide such an iterative procedure.

It is respectfully submitted that claim 1 is not anticipated by Gounon. Similar arguments apply to independent claim 8. Dependent claims 3-7, 11, 13-14, 16-18 and 20 recite additional important limitations and should be patentable for the reasons discussed above with respect to claims 1 and 8 as well as on their own merits. Accordingly, the anticipation rejection should be withdrawn.

All objections and rejections having been addressed, Applicant respectfully submits that the application is in condition for allowance and a Notice to that effect is earnestly solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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